CHLOROFORM

Also known as: Trichloromethane, $CHCl_3$, Chloroformum
Chemical reference number (CAS): 67-66-3

WHAT IS CHLOROFORM?

Chloroform is a clear liquid with an ether-like odor and a slightly sweet taste. It is a naturally-occurring chemical, but most of the chloroform in the environment is man-made. Chloroform is a member of a group of chemicals called "trihalomethanes." It is used to make coolants, as a fumigant for grain, and as a dry cleaning spot remover.

Chloroform can be formed during the break-down of chlorine-containing compounds, and may be found in in small amounts in chlorinated drinking or swimming pool water. Chlorine treatment of drinking water is often necessary to prevent diseases that can be a major cause of illness.

Chloroform evaporates quickly. Most of the chloroform that ends up in lakes, streams, or soil evaporates into the air. However, chloroform that seeps through soil into ground-water can remain unchanged for many years.

HOW ARE PEOPLE EXPOSED TO CHLOROFORM?

Breathing: People who work with chloroform are at a greater risk. People may also be exposed by inhaling the chemical as they do laundry or bathe with contaminated water.

Drinking/Eating: People can get low level exposure when they use contaminated water for drinking or for preparing food.

Touching: Chloroform can pass through the skin when people handle pure chloroform or products that contain it. For example: touching contaminated soil, or using contaminated water for activities such as bathing, swimming or doing laundry.

DO STANDARDS EXIST FOR REGULATING CHLOROFORM?

Water: The state groundwater standard for chloroform is 6 parts per billion (ppb). The state and federal drinking water standard for total trihalomethanes in chlorinated, municipal drinking water supplies is 100 ppb. We suggest you stop drinking water that contains more than the standard for your water supply. If levels of chloroform or trihalomethanes are very high in your water, you may also need to avoid washing, bathing, or using the water for other purposes. Contact your local public health agency for more information specific to your situation.

Air: No standards exist for the amount of chloroform allowed in the air of homes. We use a formula to convert workplace limits to home limits. Based on the formula, we recommend levels be no higher than 0.2 parts per million (ppm) of chloroform in air. Most people can't smell chloroform until levels reach 133 ppm or higher. If you can smell the chemical, the level is too high to be safe.

The Wisconsin Department of Natural Resources regulates the amount of chloroform that can be released by industries.

WILL EXPOSURE TO CHLOROFORM RESULT IN HARMFUL HEALTH EFFECTS?

Immediately or shortly after exposure to a level of 100 ppm of chloroform in air, a person may feel tired, dizzy, and have a headache.

The following health effects can occur after several years of exposure to chloroform:

Cancer: Chloroform is suspected of causing cancer. Liver and kidney tumors have been reported in laboratory animals. Any exposure to a cancer-causing chemical may increase your risk of developing cancer.

Reproductive Effects: The reproductive and developmental effects of chloroform are not known. However, chloroform can enter the bloodstream of a developing baby.

Organ Systems: Damaged liver or kidney function can result when levels of chloroform reach 300 ppb in water or 0.25 ppm in air.

In general, chemicals affect the same organ systems in all people who are exposed. However, the seriousness of the effects may vary from person to person.

A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking.

It is also important to consider the length of exposure to the chemical; the amount of chemical exposure; and whether the chemical was inhaled, touched, or eaten.

CAN A MEDICAL TEST DETERMINE EXPOSURE TO CHLOROFORM?

Chloroform is rapidly flushed from the body. Chloroform can be measured in exhaled breath, urine, blood, and other tissues, but no reliable method exists to determine the level of your exposure. Because chloroform can be formed in the body following exposure to other substances, levels found in tests cannot always be linked to just chloroform exposure. Doctors can use tests of liver, kidney, and heart function to evaluate the health effects of chloroform exposure.

Seek medical advice if you have any symptoms that you think may be related to chemical exposure.

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

FOR MORE INFORMATION

- Poison Control Center, 800-222-1222
- Your local public health agency
- Division of Public Health, BEOH, 1 West Wilson Street, Rm. 150, Madison, WI 53701-2659, (608) 266-1120 or Internet: http://dhfs.wisconsin.gov/eh

Prepared by the
Wisconsin Department of Health and Family Services
Division of Public Health with funds from the
Agency for Toxic Substances and Disease Registry,
Public Health Service,
U.S. Department of Health and Human Services.

(POH 4355 *Revised* 3/2000)